

NDRC NOFA-Specific: Q & A: Benefit Cost Analysis

Thursday, July 23, 2015

3:00-4:30pm EST

Sandy Patel: Good afternoon, everybody, and thank you for joining us for the NDRC Phase Two Webinar Series. Today's topic is NDRC NOFA Specific Q&A on Benefit and Costs Analysis. My name is Sandy Patel. I am with TDA, technical assistance provider for HUD. I will be serving as the host today. I am going to run through some technical instructions on how to ask questions and things like that before I hand it off to our wonderful presenters. Please turn off your cell phones, close the email and all other programs on your computer, and give your undivided attention to our presenters today. If you have any technical problems, you can call my colleague Vicky Grim at the telephone number on the screen, or you can send a chat message to the host. That will come directly to me and I can help you through any issues that you might be having. All participants will be muted during the call. Questions can be asked in two ways; you can ask a written question using the Q&A tool or verbal questions via the conference call. You can ask a written question at any point during the presentation. The panellists will collect those and answer them when we stop to question. To ask a written question, use the Q&A tool; it is located on the right hand side. You can see a screenshot of what it looks like up on the screen. If you do not see it, click on the triangle and it will drop from the box. Please ask questions to all panellists then just type your question in the box and click, "Send." Again, those you can do at any point during the presentation. You can also ask questions verbally. There is one step that you need to do in order to do that. You will need to connect your phone through your online login in WebEx. If you take a look at the participant panel, you will see your name under the attendees. If there is a phone icon next to your name, like there is one on my side here, then you're all set. If there is not a phone icon next to your name, you will need to look on the event info tab, midway down the page there is an identify code and hit pound and then a number and then pound. You can put that in your telephone keypad at any time. When you are ready to ask a question there is a hand icon on the lower right hand corner of the participant panel. If you click that, you will virtually raise your hand. When we pause for questions, we will take questions in the order they are received. We will un-mute your line and you can ask your question at that point. All questions, whether written or asked verbally, will be answered verbally. We may not be able to answer all questions, but we will try to answer the common questions first. Please send additional unanswered questions to the email

address on the screen. That is resilientrecovery@hud.gov. With that, I'm going to hand it off to Allison with HUD. Thank you. Allison?

Allison Heck: Sorry I was on mute. Sorry everyone. Hi everyone and welcome to this week's webinar and Benefit Cost Analysis Question and Answer. Today you're joined by me, Allison Heck; I am on detail to HUD from FEMA working specifically on this competition. I am joined with Sara Jensen from the HUD Office of Environment and Energy. We have an expert on the line as well from FEMA to help answer your questions as well as members of our NDRC team: Lindsey, Jorge, and Duncan regarding BCA requirements for the NDRC. We're also going to provide a brief overview of the BCA requirements for this competition. So the agenda for today are to provide that overview, to talk about some NOFA updates related to BCA, and relay the requirements for non-covered projects. I really want to emphasize that this is a question and answer webinar so we're really looking for questions from you. We won't be presenting too much, we want to get really good—find out questions from you to help you further applications to make them strong and robust. This is just our general graphic we show each time. I can't believe it, but we're just about at having three months left until your applications are due—if I have my math right—on October 27th. I also want to reference the fact that I know some of you who may be calling in may be fresh from the Rockefeller Resilience Academy and have your minds racing with all kinds of ideas. I thought that was a great academy and for those that are going to the one next week in Chicago, we will have question and answer periods at that academy. We are currently chronicling all of them to be included in the FAQs and updated on the website. All questions that are fielded by HUD at both academies will be made public. With that, I'll turn it over to Sarah.

Sara Jensen: Thanks so much, Allison, and hello everybody. Today is our first live BCA webinar. We have recorded and posted a detailed overview of the Appendix H requirement, and also webinar and data resources and expert tips, and if you haven't already watched these, we recommend that you take a look. As Allison mentioned, we have a FEMA expert, Jody Springer, on the call today. He presented on that second webinar so if you have any follow-up questions on the material he presented he is available. Just as a reminder, you can see on the slide Appendix H; this is the section that contains the instructions for completing a BCA for the NDR competition. I also need to say that Appendix H and the NOFA itself prevail if anything we say today conflicts or appears to conflict.

Those of you that have watched the other BCA webinars will recognize some of the slides today. Here is just a reminder that a benefit costs analysis is a look at all the costs and benefits over the life of the project considered in present dollar value. For covered projects in this competition, your analysis must show the benefits are demonstrated by the evidence submitted to justify the cost. A covered project is a major infrastructure project

or two or more related infrastructure projects that have a total cost of fifty million dollars, including at least ten million of CDBG-DR or CDBG-NDR funds. HUD specifically wants BCAs for covered projects to include economic revitalization and other social and community benefits, and at the same time, we recognize that benefit cost analysis is difficult for community development objective and we're allowing, in fact, encouraging, applicants to include up to three pages summarizing other benefits and costs that are difficult to monetize.

For Phase 2 application, HUD has asked applicants to identify phasing or scalability for your proposal. In order to show that the scaled or single phase of a project has independent utility, applicants must perform a BCA of each component or phase and you can see here, a table showing an example BCA that shows independent utility of the two phases of the project.

Using an existing BCA: HUD will accept an existing BCA that has been accepted by the US Army Corp, FEMA, or US DOT provided that it meets these criteria, so it must be for the same project as your NDR application. It has to include economic revitalization and other social and community benefits that are focused for HUD, and again, these can be included in a supplemental narrative no longer than three pages, if these can't be monetized and included in your calculations. It has to include phases or scalability as I just mentioned and it has to justify using a modified discount rate. I want to point out that your BCA has to be run with a 7 percent OMB discount rate and have to use the basic assumptions outlined in Appendix H. Other agencies have different assumptions so make sure to update your calculations if you are using a BCA from another agency.

Briefly, here's an overview of the three components of your BCA submission; the BCA calculation itself, the narrative description including the required table of benefits and costs, and a three-page summary of benefits and costs that are difficult to monetize. We've had some questions about page limits so I want to talk about that here. There are no page limits for the BCA calculations, although we do ask for this to be in one Excel or Word table and we much prefer Excel, and there is no page limit on the narrative description. We also indicate in the notes that either you can submit additional information or narrative explaining how you're monetizing costs or benefits; none of this information will count against your application page limit. There is a three page limit to your summary of benefits or costs that are difficult to quantify.

Here is a list of the cost and values that must be considered in the required narrative table. We give some examples to consider for each category in Appendix H and we also talked about this and give examples in the first recorded BCA webinar. For your BCA you must include the rationale for including the effect and basis or methodology for how you quantified and monetized each effect. The categories that you see in blue are those that all projects, covered or not, must check under Phase 2, Factor 3.

Here are the Phase 2, Factor 3 requirements for all projects. HUD asks you to select at least one metric per category to track for each proposed project. The applicant, you guys set the outcome in metrics, that they must be clearly relevant to measuring the success of your project. It's important that you consider outcome attribute values as much as possible as opposed to output. For example an output would be acres of marshland created, and an outcome would be the resulting impact on people; there may be less damage from waves, better recreation opportunities, etc.

There were two important updates between the Appendix H that was published with Phase 1 and the one published with Phase 2. The first update is instructions for programmatic BCA, and the second is an update in the statistical value of life. Let's start with the programmatic BCA. This update applies to applicants that are considering asking for money from HUD to run a mini evaluation and then make project-specific selections, much like a state CDBG program. If you're considering such an approach, HUD strongly cautions you about timing, since this money has to be obligated and spent in very tight statutory timelines. However, HUD has outlined an approach to the BCA for these cases where you won't yet know the specific projects. This language on this slide is from the updated Appendix H. You can read it and get the details. I want to point out that if you use this approach, if the total program, i.e., the total dollar amount you're asking from HUD and for the program as a whole, meets the covered project definition, it triggers a BCA for each component or each project under your program, even if the individual projects are below the covered threshold.

Here are the basic assumptions listed in Appendix H and the last bullet is the value of statistical life which is how you value the avoidance of injury or death as a benefit.

These are the current numbers for FEMA and they're reflected in the updated Appendix H so if any of you printed out Appendix H in Phase 1, please make sure to go back and download the new version so you're working with the latest numbers here.

Here are the resources on BCAs and if you watch the webinar and data resources and expert tips we have a lot more that you can use. Now we'd like to open it up for questions.

Allison Heck: Hi everyone, this is Allison, I'll be moderating the Q&A session so I'm going to go ahead and start with the first question, which I think may be appropriate for Jody. The question is, "The frequently quoted NIBS document that demonstrates a four-to-one benefit costs ratio for disaster mitigation, while it discounted future property damages, used a zero discount rate for the future benefit of reduced deaths and injuries. This was the philosophy." I have to scroll down to get to the—this is a carry-on question—sorry. "Of authors Adam Rhodes and Keith Porter it seems to violate OMB guidelines and DOT and HHS practice. The four-to-one has been quoted in several

NDRC Phase 1 proposals. Should this zero discount rate be used in Phase 2 benefit cost analysis?" Jody, do you think you can answer that or would you prefer Sara?

Jody Springer: I can answer in terms of the study since I am familiar with it. It was conducted before I got home at FEMA, so yes from what I do understand that the four-to-one study did use a lower discount rate and I have heard even zero and I've heard that they eventually use two and four percent in some areas of it. I will say that while I do see that four-to-one benefits cost ratio number thrown around a lot. What is important to remember, supposedly, it was an independent study to assess the future savings for mitigation activities. While the study does throw around four-to-one and that they use a lower discount rate than the seven percent as a federal agency such as FEMA, we do have to stick to the seven percent discount rate. Another study you might be interested in if you're looking at numbers is the Congressional Budget Office did an analysis of the FEMA's pre-disaster mitigation program. They actually use the seven percent discount rate for that analysis and they found that the pre-disaster mitigation (PDM) program was at three-to-one. Even using the seven percent it wasn't too far off from the other NIBS study of four-to-one.

Allison Heck: Great thanks, Jody. All right, we have another question. "Does each phase have an independent utility mean that each phase or component must have a BCR greater than one, or just that each phase component must be a part of a logical-related project and contributes to total benefits?"

Sara Jensen: I'll take a stab at that one. The first thing to say is that HUD does not say in the NOFA or Appendix H that your BCR must be greater than one. What we say is that you have to show that the benefits outweigh the cost. The three page supplement comes into play. If there are benefits on, for example, community cohesion or some other value that's difficult to monetize, you can include that in the qualitative and we'll take that into account. That's the first thing I wanted to say. The second thing is that that is the standard that applies to the project as a whole and to the components and phases.

Allison Heck: Okay thanks, Sara. Are there any other questions? Those are the only two we have so far. You can also ask general questions on the NOFA if you need any clarification points on that we're in the room to field those as well. You can raise your hand to ask a verbal question and Sandy can help with that.

Sandy Patel: Allison, there is a question in the Q&A.

Allison Heck: Oh great, thanks. Let me see. Oh, I think that was the two-part question that's been answered. Oh here we go, "The BCA overview webinar stated that BCA narratives must be evidence based. Does this mean historical damages only, or does it also include engineering analysis / judgment?" Whoever wants to take that one.

Sara Jensen: How about I'll start, Jody, and then you can weigh in if you have any comments from your experience. We really want the BCA to be grounded in data and evidence, but we're not limiting only to historic damage. FEMA has a lot of models on how you can assess future damages that may occur from a similar disaster. There are ways to assess frequency of storm events or fire events or whatever the disaster is so as long as you're using theory or published data and you should cite what you're using, you can include that in the BCA. Jody, do you have any thoughts?

Jody Springer: Yeah, Sara, I'll just add what we do at FEMA and I know Ken (the questioner, *ed. note*). I've known Ken for even before I came on at FEMA so he's definitely aware of the way we do things. Yes, for some events, there are sources of information out there that will tell you what the frequency of the event is, the recurrence of the event, what your risk is. You might not have actually experienced an event but you could be in the high-risk area and at least for FEMA when we're talking about the mitigation programs, the idea is to prevent those damages from happening. We don't want to wait around for an event per se to happen. We would like to do the mitigation up front; that's the whole purpose. In the past we would tell people we were a little bit more strict and say, "You have to have demonstrated damages before we mitigate you," but that didn't make sense. We were telling people, "You need to have a lot more losses before we'll invest to avoid those future losses." At least from some of the FEMA programs, we do allow the engineered estimate as long as it's based on sound judgment, it's based on other information from other agencies, identifying the risk, recurrence information, etc.

Allison Heck: Thanks, guys. All right, we have a few more questions coming in. "Could you provide more clarification on this 50 percent LMI benefit? Is it 50 percent of funds must benefit LMI? Or 50 percent of all beneficiaries must be LMI?" Hold on, we're side barring who should actually field this question first, just give us a moment to collect. If this is for the NDRC team or the BCA peeps, hold on. This is what we think; we will need to have Jesse weigh in on directly so please submit that to resilientrecovery@hud.gov and we'll make sure it's posted in the FAQs so we'll move onto the next one. "What weight would a qualitative part hold as compared to the quantitative for the BCA?"

Sara Jensen: We don't have an established weight. What we say in the NOFA is that the benefit of the project—and let me see if I can find the language, let me see if I can get it exactly—let me come back to that one so I can read exactly what we say in the NOFA. Can we go to the next question and then I'll find the answer?

Allison Heck: Sure thing. The next questions are, "Do costs meet"—is that what I just said? Ok sorry. "If some BCA calculations are done using FEMA BCA software, can we

attach the FEMA BCA software output as documentation and will HUD have the software expertise to open, read, and interpret the FEMA BCA results?”

Sara Jensen: There's a number of parts to that question. In the NOFA we do allow you to use BCAs that were done for FEMA so you could submit that BCA but it has to meet all the criteria that I outlined in the slide earlier. You need to make sure that you include the economic development, revitalization and other issues that HUD wants to include that can either be in the calculation or in your supplemental three pages. That's the first thing. You would have to make sure that you're running it with the HUD assumptions that are outlined in Appendix H. You have to make sure that is the case and also remember that there are three parts to this so you would still have to do the narrative description requirement that's outlined in Appendix H. As far as HUD being able to open the document and run the software, we would not be able to do that, I don't think, so you would need to submit it in a form that we could review it and that if there are any calculations or assumptions or data that FEMA would just be able to pull from the software, you would have to outline that for us. Remember, there's no page limit so if that's the case, you can just submit some extra pages describing the BCA.

Allison Heck: Ok great. Do you have any other questions? Ooh! Sara did you want to go back? Are you still looking for the answer to do cost...?

Sara Jensen: Yeah, you know I think I'll just get it off of my slides. Basically the question was about weighing qualitative versus quantitative and what the NOFA says is that we will not spend any Phase 2 activities for covered projects for which the benefit to the applicant community and to the United States as a whole are not demonstrated by the evidence submitted to justify the cost. We don't have a set weight at this point but we will be looking at the numbers that you come up with in the BCA and the qualitative supplement to make that determination.

Allison Heck: Great, and then a follow up question from that same person is, “Do costs need to be escalated as the projects may occur over time?”

Sara Jensen: I'm not sure what you mean by 'escalated' but you do need to include all of your costs so you'll have your initial costs you may have costs going out a number of years and you may also have maintenance cost and operating costs. If you remember back to the first slide, what you're doing is you're taking all of your costs and all of your benefits and you're discounting them back to a present dollar value. Cost that you spend this year will have a lot more weight in your analysis than costs you spend in year ten because you discount the year ten costs back to today's rate. You do need to include all the costs in your project and they need to be discounted back to the present value and that is that OMB seven percent discount rate that we've been talking about.

Allison Heck: Thanks, Sara. Jody, did you have anything to add on that question from the FEMA perspective?

Jody Springer: Not really. In terms of what FEMA does, for example, if we do have a project coming in and maybe there is a lot of environmental and historic preservation review that we know that's going to be required, at least at FEMA I know that if the project is going to cost a hundred thousand dollars this year, and we know that the project is not going to be rewarded until two years from now, we will allow them to escalate or inflate the cost by a certain percentage—something reasonable, something defensible, something that is literature-based—to account for the fact that the project is not going to happen until two years down the road and prices go up over time. FEMA has seen this for construction projects especially related to concrete and rebar when the Chinese started their big boom a few years ago, we saw that prices were shooting through the roof very quick so FEMA will allow an escalation on the dollars being requested if we know that there's going to be a delay in award, like I said for some types of reviews, especially when it's EHP review. Not real sure if HUD is going to allow folks to ask for more money than what's needed today if the project is going to take a year or two, that is definitely more a question for Sara.

Allison Heck: Ok so we might also flag that one to also go into resilientrecovery@hud.gov for further clarification so that we can get a policy-based answer out to all applicants as well. Another question is, “Without having precise modeling, which may be part of a final third phase award, how are we to estimate the extent of benefits for something along the lines of a large floodwater detention area in the absence of such modeling?” Either Jody or Sara, whichever one feels like they might want to take a first stab.

Jody Springer: Ok, this is Jody, I guess I'll take the first stab and at least address how FEMA would address it. In regards to construction of large floodwater detention basins or areas, I know at FEMA we are looking for some type of modeling. The worst thing you can do as a government agency is fund a project and end up causing more harm than good downstream or by diverting floodwaters and that is something that we do try to document at least at our agency is we are looking for some type of H&H modeling to demonstrate what the benefits are being generated from this detention base and to ensure that there's no adverse affect.

Allison Heck: Thanks, Jody. Sara, did you have anything you wanted to add to that?

Sara Jensen: I do not.

Allison Heck: Ok I think we've answered all the questions thus far. Again, you're welcome to raise your hand to ask a question verbally through WebEx or you can ask

additional NOFA questions for the NDRC team here in the room. You have us until four o'clock, should you wish to keep asking us questions. Oh, do you want to go back to that one? Ok, we're going to do a quick clarification, Duncan's going to field the question on, "Could you provide more clarification on this 50 percent LMI benefit? Is it 50 percent of funds must benefit LMI? Or 50 percent of all beneficiaries must be LMI?"

Duncan Yetman: So this question really gets to where you can spend CDBG-NDR funds and as you know that's in your MID-URN target area. What you need to do is refer to your Appendix A, your Post-Award requirements. In there we state that 50 percent of funds must benefit low- and moderate-income persons. It's not that 50 percent of all the beneficiaries must be LMI but 50 percent of funds must benefit low- and moderate-income persons. There's your answer. That's on page 20 of the Appendix A, Post-Award Requirements.

Allison Heck: Thanks, Duncan. Do we have any other questions coming in? Ok, I'm going to give a pause for people to ask more questions and then can you please review if you could how to raise your hand for a question. Would you mind telling the audience that?

Sandy Patel: Yes, so to raise your hand there is an icon on the bottom right hand corner under the participant panel. You just click on that to raise your hand. Then once we see your hand is raised, we'll go ahead and un-mute your line and call you.

Allison Heck: Thanks, Sandy. We have one new question coming in, "Referring back to the modeling question, are we then expected to conduct all necessary modeling as part of the Phase 2 applications?" Sara, do you have any comments on that or would you like to defer to the FEMA perspective first?

Sara Jensen: I would just say that it really depends on what you're doing. There may be some projects where you do need to do modeling in order to calculate the costs and benefits, and there may be others that you don't and I have a feeling Jody can provide more detail.

Jody Springer: Yeah, at least for FEMA, we're new to phasing different projects now. We're mostly seeing it up North for Hurricane Sandy. We've done phasing over the years but it's becoming more often. What we're generally doing is we're looking at the Phase One as the design, data collection. Phase One at FEMA does require a benefit costs analysis based on generalized assumptions. Once Phase One is approved, the funding is used to further refine due data collection and provide the final benefit costs analysis as part of Phase Two. That's where at FEMA we will pay for the studies to be done that's needed to demonstrate that a flood detention basin has a reduction in damages downstream through the H&H modeling. Once that information is collected and the

analysis is put together, then that's reviewed to get to Phase Three where the actual project is funded based on those assumptions.

Sara Jensen: Thanks, Jody, and just to clarify to the viewers, we're with this I think this Phase Two was referring to the NDRC Phase Two which is the part of this application that requires a BCA.

Allison Heck: Thanks, and I would also suggest that that question come in through resilientrecovery@hud.gov so that we have an FAQ posted on that as well. That's a good one to submit to us. Another question is, "To what extent does HUD expect the BCA narrative or other parts of the application to consider alternative projects to those being proposed for HUD CDBG-NDR funding?"

Sara Jensen: One of the things that is highlighted in the NOFA and we talked about in the earlier webinars was the link between your NEPA—that's the environmental review—and the BCA. The OMB circular talks about discussing alternatives and your NEPA analysis also needs to discuss alternatives. Within the boundaries of the guidance from OMB and NEPA, you can make decisions about presenting alternatives. Does anyone on the NDRC team have anything to add?

Allison Heck: No, I think for now that's good. It might be another one, too, that require clarification through resilientrecovery@hud.gov. Ok, so another follow up question, "From what I am hearing, modeling is not required but can be used to further refine the analysis. Is this a correct interpretation?"

Sara Jensen: I would say yes, depending on your project.

Jody Springer: Just to add to what Sara is saying, again, coming from the FEMA perspective you would definitely want modeling to occur at some point, especially if you're doing a detention base. Again, you don't want to do more harm than good by building one. Secondly, coming from the FEMA perspective since we have flood insurance, if you're able to have H&H modeling showing how the project is eliminating flooding, if it happens to be in or near a flood plain or a special flood hazard area, that modeling can be used to go back to FEMA and do something called a CLOMR and a LOMR which is Conditional Letter of Map Revision. This will mean that you're making some kind of changes where the flooding is not going to be as bad as it has historically because we're building this detention basin. That in turn will allow for changes in flood maps which means you might be able to remove people from the flood plain and that could lower also the insurance rates of people in the area. Modeling these kinds of things can reap a lot of benefits.

Allison Heck: Thank you, Jody. All right, again I'm guessing we have no more people raising their hands. Looking for additional questions, we have about 15 minutes or so left

in the webinar. I'll hold to see if more questions come in for the moment. Sara, I'm going to ask a question that came up during the Academy earlier this week that you can field, which was, "What is the unit of analysis for our BCA that we're asking for as part of this application?"

Sara Jensen: Ok, Allison, if I understand your question, do you mean how you report the output in terms of a benefit costs ratio?

Allison Heck: I think, well the answer that Jessie gave was that it was a project.

Sara Jensen: Oh, ok. How do you define...?

Allison Heck: Yes.

Sara Jensen: Yeah, ok. You're doing a benefit cost analysis on your project but I just want to point out that the NOFA and Appendix H direct you to aggregate together any logical, functional, or geographical component. You want to look at the whole project and aggregate related activities. The other thing is that if you're counting activities towards the long-term commitment requirement in your Phase 2 application, that has to be included in your benefit costs analysis; it needs to be included as part of the project. Does that answer, Allison?

Allison Heck: Yes, it does. I would ask another thing that came up was the inclusion of that long-term commitment and the BCA if there's any other additional words of wisdom you have on how it has to be included.

Sara Jensen: That may be something we can think about and put out on the FAQs. I don't have anything else on the top of my head.

Allison Heck: Ok. Ok everyone, I'm going to give out one more final call for questions. Oh! Here we go. "Does HUD expect sensitivity analysis for every BCA or just those with big uncertainties?" I'm going to let Sara and Jody field these and then I'll just add one comment that Jesse said at the Academy at the end. To Jody and Sara.

Sara Jensen: Let me start. This is Sara. In the required narrative there is a required table that you have to fill out for each cost and benefit and we ask in that table for you to make a determination of the uncertainty. If you complete your cost and benefits and have determined that you're fairly certain that all of the cost and benefits, then you would not need to do a sensitivity analysis. If you've complete that table and some of them, you're really uncertain about the benefits or the costs, then we would want to see a sensitivity analysis. One of the places we want to see a sensitivity analysis is if you choose to, in addition to the seven percent discount rate, if you choose to use another discount rate and

it has to be no lower than three percent, but if you do choose to use another discount rate that would be something that you would perform as part of a sensitivity analysis.

Allison Heck: Thanks. Jody, did you have any maybe expert tips about sensitivity analysis you might to add in there?

Jody Springer: Ok, that's funny because FEMA when we do benefit costs analysis we don't really address or deal with sensitivity analysis. We like to deal in absolutes. It makes our job a little easier when you have one number and you're not splitting between less-than-one and a greater-than-one ratio. From our end, no.

Allison Heck: Thank you, Jody. What I was going to add that Jesse had said, Sara already addressed which was, "If you think you can justify a discount rate other than the OMB and you want to reflect that, the place to do that is in your sensitivity analysis." Again that will be posted in the FAQs because of its coming out of the Denver Academy. This is the last call, I'm going to say, on questions. I'm going to give it maybe two minutes so get your questions in now on anything; if you have them, we're here to take them. All right, one question came in. "It appears that a lot of information is being requested such as sensitivity analysis or studies that need to be completed in the few weeks." Yep. It's a billion dollars; we're going to make you work for it. If I were Jessie, that would be what she would say. Again, the sensitivity analysis is a level of uncertainty that—Sara's how it came out is slightly different. Sara, do you want to talk about that, about the requirements of the sensitivity analysis or not, if that's actually required as part of the BCA?

Sara Jensen: It is discussed in Appendix H and maybe we could do frequently asked questions... I'm not sure whether it's required or not but it is encouraged if you have benefits that are highly uncertain or if you wanted to use an alternate discount rate in addition to the seven percent. As far as the timing, we agree and we want everyone to start early on this process so that you can have a robust BCA if you have a covered project.

Allison Heck: Thanks, Sara. Again, I think that we have some questions coming out of the Denver Academy that will also get to this and will also mark it as one we want to put out through the FAQs.

Lindsey Johnson: One other note, too, is that we will be at the Chicago Academy next week and doing the same thing with capturing questions and answers so make sure to take a look at the FAQs when they are posted.

Allison Heck: Ok, while we're waiting for some more questions, I do want to remind everyone on this webinar that as Sara said we have the prerecorded webinars on the BCA overview, the expert data tools and tips (I know I got that somewhat wrong in terms of

the title) that includes some great tips from Jody as well as from DOT staff and Sara as well. Also as a reminder we do have the Phase 2 NOFA Walkthrough that is posted as a prerecorded. We noticed that some people at the Academy had not been looking at the prerecorded webinars but we try to push out some really important information through those mediums so that you can get that information on your own time schedule. I think we also have another BCA Q&A scheduled for September 17th, correct Sara? Is that what you have on your schedule?

Sara Jensen: Yes, that's correct.

Allison Heck: As you continue to crunch the numbers please feel free to submit questions through resilientrecovery@hud.gov and then if you have any last minute questions, we'll be here to field them on September 17th. Next week, we will be holding our first topical webinar on building resilient energy systems and that will feature HUD staff as well as staff from the Clean Energy Group so it should be a really good one for those who are thinking about resilient energy projects for their Phase 2 applications. With that, I don't see any other questions coming in so I think that I will go ahead and close us out a little bit early. Thank you everyone for your participation. Here we have one last one... No, we're good. We're finally leaving, sorry.